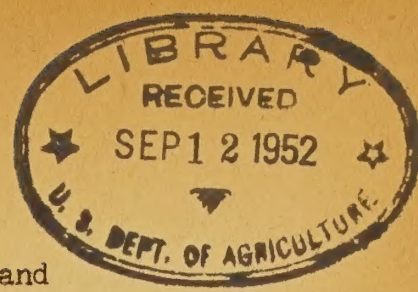


A COTTON EDUCATIONAL PROGRAM

by

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Since this Congress deals primarily with research and there has not been a wide variety of production problems discussed, I hope it will be of passing interest to examine some of the teammates of research as we have seen them pulling together on cotton, the mainstay of the South's economy. Major emphasis in research and Extension in the South over the years has been on cotton. The combined State and Federal Extension and Research budgets in the 15 cotton States approximates \$50,000,000 annually. Of course, not all of this is spent on cotton, but due to its major importance cotton does receive a goodly portion of these funds. By actual records, county agents in the cotton States in 1951 devoted over 38,000 days to cotton. This is equivalent to 126 man-years of time. (The chart on page 2 shows approximate number of farmers assisted by agents with the various cotton problems from 1946-1951.)

Cotton is receiving considerable time from Extension people, but the adjustments attendant to cotton farming today are demanding more and more time of the agents. However any commodity that produces $3\frac{1}{2}$ billion dollars of income, is grown on 2,000,000 farms and furnishes a livelihood for 13,000,000 people should receive major emphasis by all educational forces.

If anyone ever gets around to writing a history of cotton, the decade between 1930 and 1940 will stand out above all other periods with important events for cotton improvement. More things were done during that period than was done in the 200 years of cotton's history leading up to 1930. You will note from the chart on page 3 that the yield of cotton for the 20-year period prior to 1930 remained more or less static and actually lost ground in the late 20's.

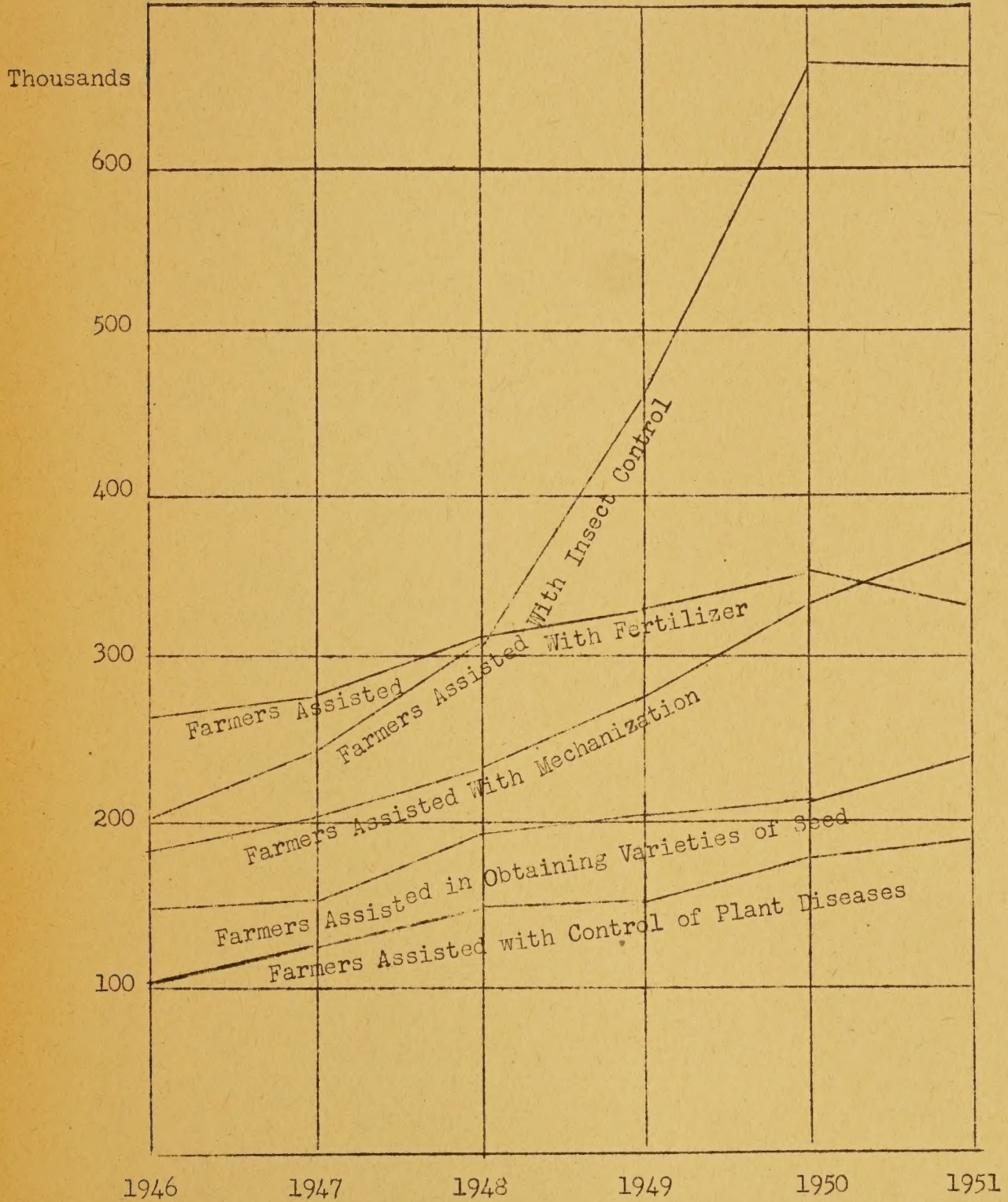
THE UNIVERSITY OF CHICAGO
CHICAGO, ILL., U.S.A.

The following is a list of the names of the persons who have been elected to the office of the President of the University of Chicago for the year 1911-1912. The names are arranged in alphabetical order of their last names.

1. Mr. James H. Thompson
2. Mr. John D. Johnston
3. Mr. William B. Ewing
4. Mr. Charles D. Walcott
5. Mr. Henry D. Coe
6. Mr. George B. Hodge
7. Mr. John C. Merriam
8. Mr. William H. Brewer
9. Mr. John W. Alden
10. Mr. Charles F. Smith
11. Mr. John H. Johnson
12. Mr. William L. G. Rees
13. Mr. John A. R. Rees
14. Mr. John A. R. Rees
15. Mr. John A. R. Rees
16. Mr. John A. R. Rees
17. Mr. John A. R. Rees
18. Mr. John A. R. Rees
19. Mr. John A. R. Rees
20. Mr. John A. R. Rees

EXTENSION WORK ON COTTON

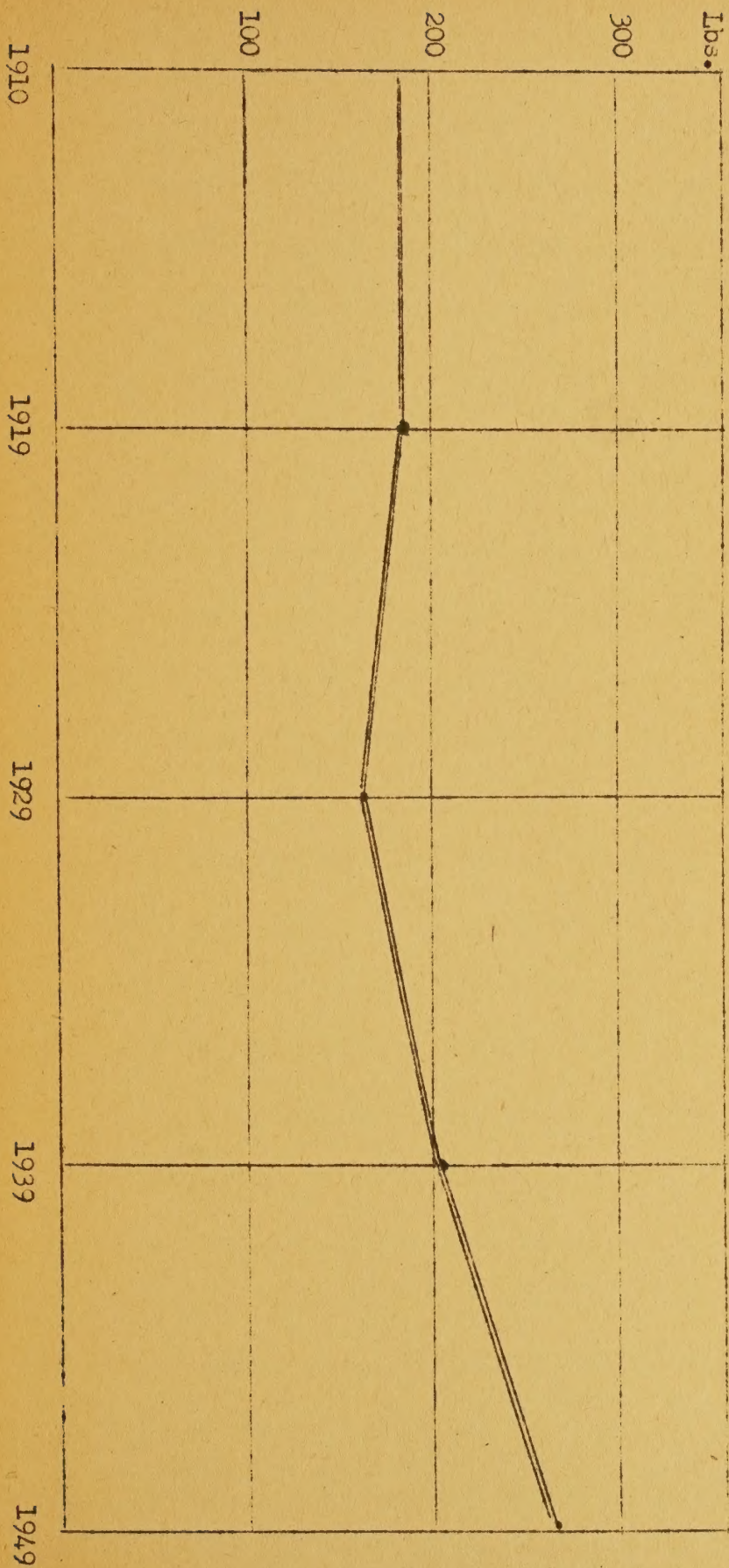
1946 - 1951



COTTON YIELDS PER ACRE - 1910-1950

Average Production of Cotton by 10-year Periods for U.S.

1910 to 1919	184.3 lbs. per acre
1919 to 1929	162.5 " "
1929 to 1939	205.4 " "
1939 to 1949	266.0 " "



Americans can justly take pride in being able not just to recognize aggravating situations but to do something to remedy them.

No one will argue about 1930-31 being cotton's darkest hour. Many thought we were facing the inevitable. Indeed the future did look bleak. Our historical markets were threatened by a new type of competition, and there were fears that the very life of our largest industry would be snuffed out. Declining consumption and many other things added reality to these fears.

Instead of giving in to despair a remarkable thing happened, the whole industry closed ranks. The farmer, ginner, warehouseman, cottonseed crusher, merchant and spinner, came together, with the Congress supporting, and met the challenge. Out of this need and desire for common action, new life was breathed into an industry that was thought at first to have a malignancy but only had grown bilious.

The cooperative efforts of industry and the government have been noteworthy. Among the early adjustments in the 30's, we find the government gin set up at Stoneville, Mississippi; then followed the regional variety testing programs; the fiber spinning testing, which furnished background for further standardization.

The first concerted efforts toward cotton improvement came about 1931 when the Bureau of Plant Industry put on three regional field men - one in the southeast, one in the Mississippi Valley states and one in the southwest and western states. In addition to these regional men, the BPI made joint agreements with state Extension Services for the employment of cotton specialists in each of the cotton states.

It was recognized at that time that one of the major causes of the poor quality of a large part of our cotton crop was the great multiplicity of varieties being grown and the mixing and mongrelizing of these in the field and in the gin. In the early 20's about 500 different named varieties and strains of cotton were

being planted across our cotton belt. At the time the Bureau began its work in cotton improvement with the Extension Service, standardized production of our better qualities of cotton in one-variety communities received major attention. This program has succeeded to the extent that today approximately 85% of our cotton crop is now planted to only four varieties. Along with the one-variety production program was also the development of a seed program designed to give the farmer adequate and dependable supplies of pure planting seed. The one-variety community production plan has grown to where at the present time many states grow only one variety and in other states we have a consolidation of a number of one-variety communities into area production.

In 1933 the Agricultural Adjustment Act was passed. Under acreage allotment much of the marginal cotton acreage was removed. Cotton was planted on fewer acres but on land better adapted to cotton. The price support program gave farmers a floor under prices.

In 1938 under authority of the Smith-Doxey Act along with the development of improvement in cotton production has been the growth of cotton classing and market news service as an aid in marketing. This act provides for free classification and market news service to any group of producers organized to promote the improvement of cotton.

Your own Research Congress was organized in the late 30's. The National Cotton Council, an organization bringing together all segments of the cotton industry, was organized in 1939. The establishment of the Cotton Research Laboratory at New Orleans in 1938 was another important adjunct to the cotton industry. Then followed the gin specialists; and RMA projects that mark a milestone of progress in cotton and cotton seed research. The National Advisory Committees, set up to work with the RMA, are doing a wonderful job in helping to broaden the point of view of the researcher.

In 1945 the 7-Step Cotton Program was developed. These steps were not new. What was new was the coordination of efforts of all organizations and agencies in fitting cotton into a balanced farm program consistent with the demand for cotton, increasing yield and quality, and lowering cost of production. Here in Texas you have one of the best examples of any state in the Cotton Belt of a well coordinated program of research, Extension and other agencies pulling together.

I can think of no industry the size of the cotton industry that can point to more accomplishments, considering the limited personnel and financial assistance that it has had to produce these accomplishments.

Through these progressive steps of improvements, we have learned the value of organized approach. We have through thousands of demonstrations established the value of such practices as fertilization, insect control, mechanization, better varieties, etc.

We need to do all of these practices in unison. If we fertilize heavy and do not control insects, what happens? Big stalks - no fruit. If we control insects and use no plant food - no stalk to support a large crop. As valuable as all these devices have been, there is no time to rest the oars.

At this point I agree and would like to refer to a statement made by Burris Jackson at your annual meeting in Dallas two years ago when he stressed greater efficiency, improved quality, more intensive promotion. He said, "Therein lies our challenge if we are to meet cotton's vital role and keep cotton a vital factor in the American and world economy." Of these three challenges before us, your Congress along with the Cotton Council has done an excellent job in the promotion phase and you have helped with the other two, but it is largely the responsibility of the Land Grant Colleges and the USDA to do even more than has been done in improving the efficiency of cotton production.

I have been a part of both of these divisions, and I do not want to be misunderstood. A lot of valuable work has been done, but I must admit we have allowed other things to crowd cotton to the side in many cases. Take mechanization for instance: When the late and lamented agricultural leader H. E. Babcock said in 1947, "If the colleges do not look out, they are going to be run over by the fast moving mechanization," he was prophesying more truth than poetry. The impact of mechanization has at least made us groggy if it did not completely run over us. The colleges have not had the funds nor the trained men to throw into this fast moving mechanization surge to adequately do the job. The same thing is true in the fields of plant science, entomology, pathology, farm management, etc. I know of no enterprise as large and as commanding as the cotton industry with so few real top-flight geneticists and plant breeders remaining for long in the work. The situation is far more critical in the South than in any other part of the country. As soon as a young man with promise shows up on any of the campuses, he is immediately picked off. As long as we continue to allow a condition where young scientists can step out at will and command far greater salaries in industry than the Dean at his college is getting, we may expect this condition to continue.

In spite of these and other handicaps the picture is not altogether dark. We can be proud of the progress made in the cotton region of the U.S. within the past two decades. A similar period of rapid advancement with industry goes back for more than half a century. The perfection of the gas engine and its accompanying innovation (the automobile) will probably be recorded by historians as the real beginning of America's greatest step forward. Whoever gets credit for bringing the capitalist and manufacturer together in a mental revolution to do away with time honored, ineffective methods that wasted so many man-hours, has done the greatest possible service to mankind. Industry wisely decided long ago that any article or product which couldn't be made with labor saving machines had best be

left unmade. Today one does not have to look long to find an array of gadgets made on the assembly-line system, the speed, size and versatility of which are so fantastic they dwarf the imagination. At the recent Armed Forces Day exhibit in Washington, among others I chanced to walk through one of the giant Troop Transport air liners. It is capable of transporting over 400 troops at a time over several hundred miles, within a few hours. Long lists of every-day conveniences could be catalogued as products of efficient production on the part of industry, but this is not my subject.

Almost without exception, when a new labor-saving step is brought about there are those who oppose it as an attempt to "plow under" people. Such opposition has almost always been proven to be childishly absurd. Is there anyone here today who would say the new cotton harvesting machines have caused hardships? With all the research and educational work being carried on by governmental and industrial agencies, we still find the vast majority of those who produce cotton to be among the lowest of the income groups. Regardless of what has been done to improve the efficiency, we still have too many man-hours being spent on growing an acre of cotton. Much progress has been made and you who are present and who produce cotton have seen this problem long ago and are doing something about it. It is incumbent upon all of us interested in cotton's future, to help explode the complacency that still exists among 75% of the cotton producers in the South and Southeast. By complacency I mean a habit of doing the same thing the same way year in and year out that results in a status-quo or satisfied-way with things as they are. Unless people become dissatisfied with "the old way" and inquire into new ways of improving efficiency, we still face an up-hill road. Farmers themselves must want to adopt labor saving methods that will reduce the number of man-hours required to grow an acre of cotton from the customary 160 hours to 30 or 40, if he desires a profit. Well managed cotton farms have found how to employ labor saving methods that will increase the net profit per acre by 50%

without increasing the yield. When they adopted good soil building practices and these labor saving methods too, the yield has been increased 50% and profits upped \$90 per acre. Moreover, when the yield was increased 150% the profits were increased \$176 per acre.

One bale of cotton-to-the-acre-goal is not enough. A goal of 2 bales per acre must become our new target or people will find other enterprises more profitable and the shift away from cotton will continue. Production costs will most always be based on acres, but the profits will come through higher yields from man-hours. Since it requires approximately the same man-hours up to harvest time to grow an acre of cotton yielding only 100 lbs. as it does one yielding two bales, we need to stress all the methods in the book that will reduce labor and increase yields.

By what I said regarding mechanization, some might have gained the impression I am recommending an all-out mechanization program for all cotton farmers in the South. That is not the intent except on those farms that lend themselves to mechanization and where it can be used to improve efficiency. Many farms in the South have 30 acre of cropland or less, and herein lies a great challenge to researchers, educators, and all of us. Most of the machines developed for production of cotton are designed for large scale operation and are too expensive or inefficient for the small operator. Farm management specialists question the advisability of recommending mechanization for units with 100 acres or less of cropland. This, of course, does not apply to tractors for power, but it does apply to harvesting and some other equipment. Capital is another limiting factor on the smaller units. Mechanization is certain to have influence on increasing the size of the farm that stays in cotton production. So capital becomes doubly important not only in providing machinery but in purchasing additional land.

In glancing through the proceedings of your Congress from year to year, I have been impressed by the unanimous accord of the speakers where they urge "more research" and I want to join that group this year in voicing a vigorous plea for a continued strong research program in every phase of the cotton industry, but at the same time we in the Extension Service concerned with cotton very definitely hope you will be equally strong in your pleas and efforts to help us in a broadened educational effort that is in keeping with the research programs.

We need to combine our whole research and education service to the farmer in one package. A one-package-deal to every cotton farmer means publications (research and Extension), radio and television programs, etc. that contain facts and figures in simple terms that will carry a unified story across the board from soil treatments - prior to planting - until the cotton is delivered in good condition to the warehouse. In the past too much of our advice to the cotton farmer has been in broken doses and often resulted in the farmer going all out on one phase of cotton production and often neglecting others that were just as essential. The fine work that has been done on insect control serves to illustrate my point. Entomologists have gotten together and put over one of the best if not the best job of any group dealing with cotton production.

Do not get me wrong - we have not overdone insect control and we must not let up on it now. What is needed is for all phases to be brought up to where the entomologists are.

We seem to have become so specialized in our research and Extension that it is getting difficult to think in terms of an over-all job of cotton production. Specialists and technicians from governmental, state and commercial organizations interested in cotton should be called together and requested to attempt a one-package deal, for those of us in Extension and other teaching fields dealing with farmers.

It has been suggested that this be in the form of a publication containing brief abstracts of results, and that these be made available first to those people who contact farmers. I am sure a satisfactory way can be found once the idea takes on form and substance.

In my responsibility of coordinating the phases of Extension work dealing with cotton (and grasslands), I am frank to admit it is impossible to find an up-to-date coverage of all the important phases of cotton production - at least in a composite form. The place of cotton in the farm operation; the extent mechanization should be pushed to make it practical; types of machinery offering the most advantages; the use of fertilizers, insecticides, fungicides, herbicides; pre-emergency treatments, and a multitude of other data needs condensing and coordinating.

